

**ABSTRACT**

**[00045]** An OLED structure includes a substantially flexible substrate, and at least one barrier layer disposed between the substrate and the OLED structure. The barrier layer substantially prevents contaminants from permeating a layer of organic material or the OLED structure. The barrier layer includes a glass layer that has certain components added or removed to improve its flexibility. The OLED structure may also include a substantially flexible substrate and at least one barrier layer disposed between the substrate and the OLED structure. The barrier layer includes a strain relief material. The strain relief material advantageously has at least one axis of orientation. Photonic or electronic components, or both could be substituted for the OLED.